paralyzes them. The effects are accounted for by the excitability of the medulla being increased by small doses, while the pulmonary branches of the vagi are paralyzed by the large ones. It follows from this that it is necessary to give large doses in order to influence the pulmonary branches of these nerves. Ignorance of these facts is, according to Meuriot, the reason why belladonna so often fails in asthma, when other drugs, in very small doses, have a beneficial effect. 5. Experiments on frogs show that atropia first destroys sensibility, and then destroys the excitability of motor nerves; but it does not abolish the irritability of muscles unless very large doses are given. In man, loss of sensibility has been found to occur in only very grave cases of poisoning. Still, in therapeutic doses it possesses the property of diminishing pain, but this effect is only a topical one. 6. Atropia invariably increases the reflex power of the cord—an assertion which is in opposition to the opinion of the majority of writers on this subject. 7. Belladonna cannot be regarded as a hypnotic, but it is, perhaps, a stupefying narcotic. Small or therapeutic doses cause agitation and sleeplessness, somewhat nervous doses cause various disturbances of the organs of sense, vertigo, hallucinations, uneasiness, general trembling, and, at times, a strange sense of fear, fantastic dreams, and gay delirium; and poisonous doses cause noisy delirium, interrupted by exacerbations of a furious character, and followed by trismus, loquacity, continual agitation, helplessness, and coma, often accompanied with convulsions and clonic contractions. The effects on the brain are due to disturbances of the circulation, and not to any elective action on the cerebrum. This opinion is supported by the observations of Schroff, who found that delirium occurred only when the frequency of the pulse was increased; and by the enormous congestion of the encephalic vessels, which is seen in animals killed with this poison. 8. The temperature is increased in man by some tenths of a degree, from 0.5 to 1.1. In the lower animals, small doses increase and large doses diminish the temperature; an increase of from 2 to 3 degrees and a diminution of from 4 to 5 having been sometimes observed. These effects on the temperature are supposed to result from changes in the circulation. 9. Atropia seems to diminish all the secretions with the exception, in certain circumstances, of the urine, which is, however, more properly an excretion. The modifications in the effects on the urine are due to differences in the circulation: small doses augment the blood pressure, and thus have a diuretic action; poisonous doses diminish the blood tension, and therefore either diminish or altogether prevent this excretion. Dr. Meuriot concludes this valuable paper by stating that belladonna should no longer be regarded as a narcotic or even as a narcotico-acid; that it has a special action on the bloodvessels and on the innervation of the heart, in virtue of which all its other physiological effects are produced; and that it should therefore be placed in the class of the *vasculo-cardiacs* of M. Sée.—*Journ. Anat. and Phys.*, Nov. 1868.

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16. *Action of Belladonna.*—According to Dr. D. DE SAVIGNAC, although belladonna is a stupefying agent when it acts fatally, it is also an excitant; and this latter property, he thinks, constitutes the fundamental character of its mode of operation. Its excitant properties are directed especially to the great sympathetic nerve, as is proved by the therapeutical applications of belladonna. The drug excites the contractility of the muscular fibres of the intestine, and thus promotes the alvine discharges. It acts besides on the biliary tubes and on the common bile-duct, rendering the stools bilious, and hence its beneficial influence in cases of hepatic colic due to the presence of biliary calculi. Its action on the sphincters appears to be of a nature to place their powers in harmony and equilibrium, for as these structures both dilate and contract, it is necessary that neither function should preponderate over the other. Thus belladonna in small doses excites the motive power both of the hollow viscera and of their sphincters, acting both on the dilators and contractors, and giving to the viscera the power of moving onwards the excrementitious matters until they are out of the system. Thus retention of urine may be due to paralysis or to spasm of the neck of the bladder; in the first case, belladonna excites the expulsive contractions, and in the second it removes the spasm. Dr. de Savignac also alludes to the advantages obtained from the local use of blisters spread

with belladonna ointment in rheumatic pericarditis and endocarditis, and in organic diseases of the heart; and he attributes this effect to the use of belladonna in checking the disorder, the irregularity, and the morbid energy of the beats of the heart, and in restoring their normal rhythm. This property, which is analogous to that possessed by digitalis, may probably be referred to an exciting action of the vagus nerve, after what has been taught by M. Germain Sée on the functions of this nerve as a regulator of the movements of the heart. In its action as an external application, belladonna is at once a sedative and resolvent; and thus, when applied in the form of ointment to joints affected with rheumatism, it relieves the pain and dissipates the swelling, and its resolvent powers are further proved by its efficacy in the treatment of glandular swellings; and oculists daily make use of it for the purpose of promoting, after the operation for cataract, the absorption of the fragments of the capsule of the crystalline lens, or of the products of consecutive iritis. Where there is resolution there is necessarily excitation, both nervous and vascular, of the parts affected. Dr. de Savignac then refers to the employment of belladonna in cases of asthma, which is caused by spasm or paralysis of the muscular fibres of the bronchial tubes, most probably the latter: but in whichever way the phenomena of asthma are explained, the action of belladonna is intelligible, for it will act as a sedative in case of spasm, and as an excitant in case of paralysis. But although Dr. de Savignac has proved that, in many cases, the therapeutical action of belladonna depends upon a common excitation of the dilating and constricting muscles, he does not wish to deny that its excito-motory properties have an elective tendency to act upon the dilators, as is well seen in the case of the iris, the dilators of which are excited by the smallest doses of belladonna or atropia. The anæsthetic and sedative powers of belladonna, although well known, are not easily explained upon physiological principles; and all that is certain is, that the drug, like opium, relieves pain, but the *modus operandi* is still to be sought for.—*Brit. and For. Med.-Chir. Rev.*, Oct. 1868, from *Bull. Gén. de Thérap.*, Nov. 30, 1867.

17. *On the Employment of Belladonna in Surgical Affections.*—Mr. Christopher Heath states that the action of belladonna, whether applied locally or given internally, is the same; viz., that by its action upon the vaso-motor system of nerves it diminishes the calibre of the capillaries, and thus directly reduces the vascularity of an inflamed part. Its action is thus peripheral; and it is, therefore, the opposite of aconite, whose action is central or upon the heart itself. It does not follow, however, that the two drugs cannot be employed together; quite the contrary: the action of the one is to diminish the flow of blood to the part, whilst the other assists the tissue to get rid of the superfluity it already contains and resist its further entrance, and the two may in many morbid conditions be advantageously combined.—*The Practitioner*, Nov. 1868.

18. *Influence of Digitalis on the Pulse.*—Dr. Constantin Paul has published (*Bulletin Génér. de Thérapeutique*, tome lxxiv., 1868) a research on the influence of digitalis on the pulse, in which his principal results were obtained by the use of the sphygmograph. He thus states his conclusions: Digitalis, in small doses, generally diminishes the frequency of the pulse; in large doses it increases it. When digitalis is exhibited in such doses as to produce its hyposthenic effects, it lowers the arterial tension; and the contrary effect may possibly be produced by very small doses, as some investigators have asserted. Finally, it is probable that digitalis raises the arterial tension when it diminishes the frequency of the pulse, and that it lowers this tension when it increases the number of the pulsations.—*Journ. Anat. and Phys.*, Nov. 1868.

19. *Syrup of Codeia in Whooping-cough, etc.*—The *Journal für Kinderkrankheiten* (7, 8, Hft., 1868) mentions that melon syrup, containing codeia, is at present used as a specific against whooping-cough in Italy. It is also employed in other convulsive coughs of children, especially those which are the